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AUTHOR Bogaty, Lisa; And Others
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ABSTRACT

A discussion is provided of the role of community colleges as the primary delivery sources for workforce retraining, using the Pellissippi State Workforce Innovation Program as a case study. The first sections of the paper document the need for worker retraining in the United States, reporting the Department of Labor Secretary's Commission on Necessary Skills' (SCANS) conclusions regarding the relationship between economic trends and population dynamics and the need for educational restructuring to encompass basic communication and math skills; thinking skills; personal qualities such as integrity; and resource, interpersonal, information, technological, and systems competencies. The next section reviews legislation related to workforce redevelopment, including the Omnibus Trade and Competitiveness Act of 1988 and the National Literacy Act. Following a brief overview of community college activity in retraining, the Workforce Innovation Program at Pellissippi State Technical Community College (PSTCC) is described. After explaining methods used by PSTCC staff to assess workforce needs, the paper focuses on issues of curriculum and instruction, indicating that: (1) the curriculum encompasses seven elements (i.e., applied learning, technologically enhanced instruction, collaborative learning, integrated curricula, team teaching, learning lab environment, and integrated student services; (2) learners in the program begin by mastering Microsoft Works in order to familiarize them with computer functions and provide them with a tool kit of basic applications (word processing, spreadsheet, and database); (3) a thematic approach and interdisciplinary milestone group projects are used to ensure integration across the curriculum; (4) each faculty member developed an exhaustive lesson plan that included resources, objectives, and activities, and the collected lessons plans were fine tuned and developed into one master program; (5) key learning objectives were established early in the project and used as a foundation for subsequent work; and (6) instructional time is divided between structured work with teachers and less structured activities involving student teams. Appendixes provide additional detail on the PSTCC program. (ECC)

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Workforce Training:

The Pellissippi State Model.

presented by

Lisa Bogaty
Dean of Applied Sciences & Technology

Allen Edwards
President

Gregory Walters
Department Head, Computer Science Technology

Paper presented at the Annual Convention of the American Association of Community Colleges (74th, Washington, DC, April 6-9, 1994)

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L. Bogaty

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WORKFORCE TRAINING: The Pellissippi State Model

The role of government at all levels in retraining the American workforce continues to expand. Public policy issues involved in this issue include, but are not limited to,

1. Economic competitiveness
2. Employment/Unemployment rates
3. Intergovernmental relationships

The government at all levels (Federal, State, and Local), as well as the private sector, is actively engaging in policy making strategies designed to address the needs of existing workers to enhance and upgrade skills. Some[1] have suggested that the 1000+ community colleges network are the best delivery systems for retraining. This paper reviews the following points:

1. The Need for Retraining
2. The Scope of Retraining
3. Legislation and Policy Relating to Retraining
4. Community College Activity in Retraining
5. Pellissippi State's Workforce Innovation Program

The Need for Retraining

The skills gap between current and future American workers and the needs of a post industrial society has been well documented. William E. Brock, summing up the conclusions of the Secretary's Commission on Necessary Skills (SCANS)[2], stated:

> Today we have a choice. We can continue down a path leading to a diminishing standard of living, a society in which the rich get richer while those at the bottom skip down one ring after another on the economic ladder, and an economy that gets clobbered by foreign economic rivals.

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[1]Dilcher, Ann Katherine, "Learning That Works," paper published by The Southport Institute for Policy Analysis, Washington, DC, 1993; Marsalis, William Carroll and Mosby, Glenna A., "Community College Network" Background Paper, Workplace Development Institute Conference, February 23-27, 1993. Sponsored by the National Institute for Technology Training and AACC.

[2]SCANS brought together 31 business, education, labor and government leaders charged with the following mission: to improve school-to-work transition by improving the way schools educate and employers use employees; to identify ways to improve all levels of education; to document changes in the American Workforce by 2000 AD. Panel assembled by Secretary of Labor, Elizabeth Dole.

> Or we can go down a different road that leads to a vibrant economy and a better quality of life for this generation and the next. . . Continuing education and training must increasingly be an integral part of the America work experience.

SCANS documented the relationship between economic trends and population dynamics. The sobering conclusions reached by the panel led to a call to action at federal as well as state and local levels. The call was to restructure education to include life-long skills training and retraining for the American workforce. Among the recommendations made were that:

1. Comprehensive certification programs be developed for those students (approximately 70%) who did not choose to pursue a baccalaureate degree. These certificates would be developed jointly by employers and schools. There would be successively higher levels of certification one could achieve.

2. All employers would commit 1% of payroll-to-worker training, with public resources used to assist smaller employers in providing said training.

3. A system of employment training and training boards would be established by federal and state government, and that these boards work with local leaders to organize, oversee, and manage school-to-work transitions and training systems.[3]

While workforce training/development is important in all sectors of the job market, no sector has been as impacted by technological and competitive challenges quite as much as the manufacturing sector. Much has been said about the demise of manufacturing in the U.S. While in absolute numbers, employment has declined in this sector, manufacturing still constitutes the most important sector of the workforce for employees with less than a bachelor's degree. As Cohen and Bysman note,

> The poor performances of U.S. manufacturers in upgrading their technologies and methods is a cause of concern because of the indispensable nature of manufacturing in an advanced economy. International trade is dominated by manufactured goods. Manufacturing still provides much well-paid employment. There are many related service jobs which depend on manufacturing, and the manufacturing

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[3]Magaziner, Ira and Hillary Rodham Clinton. "Will America Choose High Skills or Low Wages?" Educational Leadership March 1992: pp. 12-13.

sector continues to support a large share of basic research.[4]

Thus, the findings of the National Association of Manufacturers/ Towers Perrin Skills Gap Survey, "Today's Dilemma: Tomorrow's Competitive Edge," a survey conducted in 1991, are particularly damning. This survey, answered by a stratified sampling of 360 small (under 100 employees) medium (101-500 employees), and large (500+ employees) manufacturers found that basic skill differences among workers created problems that include:

1. Inability to upgrade production technology. (40%)

2. Productivity initiatives stymied by employees skill deficiencies. (37%)

3. Inability to reorganize work because many employee cannot learn new skills. (30%)

4. Inability to teach employees statistical process control or other quality-enhancing techniques. (25%)[5]

The types of deficiencies noted by over half the respondents are charted in Figure 1.[6]

The Scope of Retraining

While much attention has been given to the estimated 15% entrants who will be new to the workforce in the year 2000 (a group that is projected to be the most ethnically, racially and gender diverse in American history), a second group also deserves review: those workers already in the workforce, many of whom lack the skills necessary to stay there, much less advance, and who will comprise 85% of the workforce in 2000. The latter have experienced marked work changes during the last ten years, as technology and restructuring have resulted in fewer employees doing a much broader array of jobs. These work place evolutions have created a need for higher level skills--information analysis, technological competence, and human relation skills--than ever before.

Taylor's concept of specialization of labor, long declared dead by academics but recently remarkably chipper in many industrial work sites, has now been giving way.

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[4]Cohen, Stephen S. and John Bysman. Manufacturing Matters. The Myth of the Post-Industrial Economy. New York: Basic Books, 1987.

[5]"Today's Dilemma: Tomorrow's Competitive Edge" Learning From the NAM/Towers Perrin Skills Gap Survey, 1991: p. 12.

[6]"Today's Dilemma: Tomorrow's Competitive Edge" Learning From the NAM/Towers Perrin Skills Gap Survey, 1991: p. 11.

"Down-sizing" and "right sizing" have resulted in employees assuming multiple job tasks. Indeed, many firms have molded what were formerly three or more job descriptions into one. As a result, more complex responsibilities (formerly necessary only at managerial levels) are now commonplace at all levels of the manufacturing operation. Unfortunately, many employees do not possess the necessary skill levels to effectively function in this new environment. Even in the most basic of skills--reading--problems are apparent. One-in-five American workers read at eighth grade level or less[7]. The cross-functional jobs of today require much higher competency levels. The gap is even greater in other basic and workforce skills.

American business spent over $30 billion for workplace training in 1987.[8] While in absolute dollars, this amount of money is considerablely less than 10% of the nation's total educational expenditures.[9] According to William Brock, this figure is very top-sided. He notes that spending nearly all educational funds during the first 15-20 years of life and nearly nothing during the last 40-50 years does not appear prudent.[10] The problem is compounded by the unfortunate fact that only a third of these funds ($10 billion) is spent on non-college educated workers, despite the fact that 70% of our workforce falls into this category. Furthermore, most of this money is spent on orientation programs, not skills enhancement. Finally, training is concentrated in a very few large-sized employers. Indeed only half of 1% of all employers spend anything.[11]

What this information means is that despite the increased complexity of their work, many workers received no training whatsoever on work place skills, such as continuous improvement, team work, and using technology effectively. Many lack basic literacy skills needed to function effectively in the workforce of today, let alone tomorrow. Yet, a systematic, widely available method for providing basic and workforce skills to all workers is essential if this country is to prosper in a post industrial age.

The scope of training must include what SCANS referred to as foundation skills and personal qualities:

- Basic Skills--reading, writing, mathematics, speaking and listening

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[7]Mikulecky, L. "Basic Skills Impediments to Communication, Between Management and Hourly Employees." Management Communications Quarterly 3.4 (May 1990): 452-473.

[8]Stanton, Michael. "Workers Who Train Workers." Occupational Outlook Quarterly 33.4 (Winter 1989-90): 3-11.

[9]Brock, William E., "Continuous Training." AACJC Journal (Feb/Mar 1992): 23-24.

[10]Brock 23-24.

[11]Brock 23-24.

- Thinking skills--creativity, decision making, reasoning, and problem solving

- Personal qualities--responsibility, self-management, and integrity

According to the SCANS report, the training must also include key competencies for the workforce:

- Resource competencies--allocating time, money and people

- Interpersonal competencies--working on teams, teaching, negotiating and serving customers

- Information competencies--acquiring, evaluating and processing data

- Technology competencies--selecting, using and applying technology

- Systems competencies--understanding social, organizational and technological systems[12]

The scope of workforce training/developing is extremely broad. In order to ensure that said training is available, a number of federal initiatives have been developed to support workforce development. Below is a brief recap of some of the more important policies and legislative initiatives.

Legislation Related to Workforce Redevelopment

At the federal level, the Omnibus Trade and Competitiveness Act of 1988 (P.L. 100-413) was the first piece of legislation designed to address workforce skills.[13] This bill not only noted the importance of training, it also provided funding to develop partnerships between employers, educational institutions, and the federal government to improve literacy. Proponents of workforce training managed to attach similar provisions to a second bill in 1988, this one directly related to education rather than to trade. The Augustus F. Hawkins/Robert T. Stafford Elementary and Secondary School Improvement amendments authorized the National Workplace Literacy

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[12]Packer, Arnold, H. "Taking Action on the SCANS Report." Educational Leadership (March 1992): 28.

[13]U.S. Department of Education Office of Vocational and Adult Education, Division of Adult Education and Literacy. Workplace Literacy: Reshaping the American Workforce. (May 1992): 5.

Program,[14] which was legislation designed to encourage and fund innovative pilot projects that developed partnerships between and among business, labor, educational institutions and local leaders. When this legislation failed to move through Congress as rapidly as proponents felt necessary, they attached language and funding support for the as-then unpassed legislation to a supplemental funding bill. (The bill itself was later enacted as P.L. 100-297).[15]

The National Workplace Literacy program has served to focus national attention on the issue of workforce training. During its first three-year funding cycle, $41 million in grants were provided to 149 innovative partnerships,[16] located in 42 states and serving 67,532 employees.[17] More importantly, these pilot programs began to discover what types of factors lead to successful programs, and equally important, what factors create problems. The projects have demonstrated, quite effectively, that while each partnership has common elements, they all are unique to the particular community they serve. This observation agrees with the finding that the most effective programs have center their curriculum upon contextual learning. That is, while the basic skills and competencies noted earlier do not change, the methods of instruction and the content of the curriculum is tailored to specific types of employment within each project's service area. In other words, the Cafeteria Workers Skills Enhancement Training (S.E.T.), offered to Washington D.C. food and beverage workers, focused its materials around workplace information such as recipes, safety handbooks, and inventory forms,[18] while the Weveton Steel Corporation Workplace Literacy project focused around materials relating to recently introduced advanced

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[14]U.S. Department of Education Office of Vocational and Adult Education, Division of Adult Education and Literacy. Workplace Literacy: Reshaping the American Workforce. (May 1992): 5.

[15]U.S. Department of Education Office of Vocational and Adult Education, Division of Adult Education and Literacy. Workplace Literacy: Reshaping the American Workforce. (May 1992): 5.

[16]U.S. Department of Education Office of Vocational and Adult Education, Division of Adult Education and Literacy. Workplace Literacy: Reshaping the American Workforce. (May 1992): 13-16.

[17]U.S. Department of Education Office of Vocational and Adult Education, Division of Adult Education and Literacy. Workplace Literacy: Reshaping the American Workforce. (May 1992): 34.

[18]U.S. Department of Education Office of Vocational and Adult Education, Division of Adult Education and Literacy. Workplace Literacy: Reshaping the American Workforce. (May 1992): 34.

technology and Japanese/Deming style management structures.[19] Both were successful in improving basic and workforce skills and focused on the skills noted earlier in the Magaziner/Clinton article. But each tailored the program to local industry needs and framed the learning in work site contexts. The one clear lesson from these pilot projects is that partners must develop programs related to work site realities. This is one of the greatest predictors of success. However, it is also one of the greatest challenges to successful program development. Some of the "pitfalls" of developing contextual curriculum include reluctance on the part of employers to provide materials needed (due to the confidentiality issue) and understanding that collecting job site materials and teaching workers to use them is not curriculum development. Rather, materials are evaluated to determine what types of literacy objectives are necessary for successful use. Then a planned, integrated curriculum is developed using materials gathered as part, but by no means all, of the instructional resources. Finally, care has to be taken to ensure that all participants (employees, employers, educators, and community leaders) understand the workplace literacy training is only one component of training.[20] Other components, such as employer orientation, are still important and need to be provided.

The next federal initiative aimed at addressing workforce training/development was the National Literacy Act (P.L. 102.73) signed by George Bush in 1991.[21] This bill was different from earlier efforts in a number of ways. First, the federal funding share increased. Second, small businesses became a priority. Third, grant periods were extended from 15 months to three years. Fourth, a new program, the National Workforce Literacy Collaborative (a technical assistant project) was established in the Department of Labor and charged with coordinating efforts at the state, local, and federal levels. Finally, though PL102.73 was a Department of Labor initiative, a new National Workforce Literacy Strategy was stipulated for the Department of Education at the same time. This grant will allow the Secretary of Education to set aside up to $5 million to fund projects designed for specific industries nationwide.[22]

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[19]U.S. Department of Education Office of Vocational and Adult Education, Division of Adult Education and Literacy. Workplace Literacy: Reshaping the American Workforce. (May 1992): 39.

[20]U.S. Department of Education Office of Vocational and Adult Education, Division of Adult Education and Literacy. Workplace Literacy: Reshaping the American Workforce. (May 1992): 47.

[21]U.S. Department of Education Office of Vocational and Adult Education, Division of Adult Education and Literacy. Workplace Literacy: Reshaping the American Workforce. (May 1992): 55.

[22]U.S. Department of Education Office of Vocational and Adult Education, Division of Adult Education and Literacy. Workplace Literacy: Reshaping the American Workforce. (May 1992): 55-56.

The intergovernmental nature of P.L. 100-418, P.L. 100-297, and P.L. 102.73 are significant indicators of the political nature of workforce training/development in the United States. Partnership requirements with business and local leadership reflect the effect that the new federalism of the Reagan era, with its emphasis on solving problems at the local level, still had during the Bush era. Increased federal funding in P.L. 102.73 reflects adjustments to the political backlash Washington caught for forcing action at state and local levels without federal support. Action to address workforce training/development needs occurred at the same time the American economy was being buffeted by major corporate restructuring, stagnant unemployment rates, and one of the weakest "recoveries" on record. The strength of other countries' economies during this time was tied to superior educational systems and something the press called the "work ethic." Both the public and the government were beginning to realize that 80% of the nation's total output could be attributed to human resources and effective life-long learning systems that in the workplace are the first line of defense against economic and technological stagnation.[23] Lankard recapped future directions towards a stronger workforce and one very significant theme was that "Partnerships among all stakeholders in the training enterprise are critical."[24] Since government at all levels is a key stakeholder, the importance of workforce training as a political issue cannot be overstated.

Community College Activity in Retraining

While the need for developing partnerships to address workforce training and development activities has been widely recognized, the methods of doing so and the delivery agents are not as clear-cut. P.L. 1000-297 clearly states that educational institutions are key partners with business in workplace literacy.[25] This section will review one possible delivery agent: the nation's community college network.

There are over 1000 districts served by the community colleges nationwide. Many of these institutions have multi-campus operations serving geographically dispersed service areas. As noted by Thomas Dye, these institutions are the fastest growing segment of higher education and their mission has always included serving the adult education needs of their communities.[26] Furthermore, community colleges have traditionally served an at-risk adult population. A brief recap of some statistics on community colleges shows only 9% of high school students with "A" averages go directly to community colleges upon high school graduation. Forty-four percent of

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[23]Lankard, Bettina A., "Worksite Training." ERIC Digest No. 109, 1991.

[24]Lankford 1991.

[25]Workplace Literacy: Reshaping the American Work Force, 84.

[26]Dye, Thomas, R. Politics in States and Communities. 6th Ed. Englewood Cliffs: Prentice-Hall 1988. 430.

"A" students go to public and 27% go to private four-year colleges. Conversely, 11% of high school seniors with "D" averages attend community colleges while only 1% attend 4-year schools.[27]Age differentials (28 is the average age of community college students) and workforce participation rates are also much higher for community college than for four-year school populations. These characteristics indicate that the demographics and academic dynamics of students who attend community colleges are more closely related to those of the non-college educated workforce than to those of four year schools. Experience in dealing with academically under-prepared adults plus substantial experience in actually providing workforce training for business, industry, labor and government lend credence to Bill Brock's contention that community colleges, working in tandem with business, could provide worker training programs, especially for smaller businesses.[28]

A recent status report on community college workforce training programs provides additional support for this position. In 1992, the League for Innovation in the Community College conducted a study of community colleges across the country to determine the extent and type of workforce training presently conducted.[29] The survey instrument itself is attached as Appendix I. The sampling frame included the presidents of all 1042 two-year colleges in the United States. The response rate was 73.2%.

What the report shows is that 96% of the respondents did provide workforce training. Most (71.5%) indicated training was customized to meet local employer needs.

The broad range of businesses served by community colleges further supports the proposal that the community college network is a good delivery system for a broad range of workforce training needs. Few of the colleges (10-15%) had large programs with over 1000 employees. About half served under 25 employers and less than 1,000 employees. Approximately 23% of the colleges trained employees of small- or medium-sized (under 500 employees) firms.

Thus, the structure for workforce training programs delivered by the community college is in place. Workforce Literacy programs have provided pilot data on innovative delivery methods and curriculum design that can be used as models in developing national networks of training programs.

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[27]El-Khawas, E. Carter, D. and C. Ottinga. Community College Fact Book. New York: ACE/Macmillan, 1988.

[28]Brock, William E., "Continuous Training," 25.

[29]Dowcette, Don. Community College Workforce Training Programs for Employees of Business, Industry, Labor, and Government, a status report conducted for the League of Innovation, March 1993.

Pellissippi State's Workforce Innovation Program: A Case Study

Pellissippi has a long tradition of working directly with local industry to provide workforce training. Indeed, the college began in 1974 as a technical institute designed to address the need for skilled engineering technicians needed by TVA, Union Carbide, ALCOA, and other major employers in the Tennessee Valley.

Worker training programs for ALCOA, Rhom & Haas, Nippondenso, and TVA have successfully prepared workers for jobs requiring specific, specialized skills within those firms. This training has run the gamut from blueprint reading to CAD to Total Quality Management.

In 1992, Pellissippi State took on a different type of worker training program--retraining displaced workers. Unlike previous projects, the parameters of this project were not predefined. Rather, the objective was to define, develop, and implement a curriculum that would address a broad array of workforce skills as well as basic academic literacy issues. A team of fifteen college staff members including faculty, information specialists, counselors, human resource development specialists, technology specialists, and grants specialists was chosen for the project.

Phase One was an extensive orientation to workforce needs. Materials were identified, collected, reviewed and discussed in twice-a-week meetings of the team. Beginning with the American Society of Training Directors' (ASTD), Workforce Basics: The Skills Employers Want, report; the Secretary's Commission on Necessary Skills (SCANS); America's Choice: High Skills or Low Wages report, and the Hull/Parnell text, Tech-Prep/Associate Degree, A Win/Win Experience, the group quickly identified numerous other resources that provided a common frame of reference and fodder for discussion. Appendix II provides a bibliography of the type of materials reviewed.

Concurrent with literature scans and studies, the team developed an advisory committee composed of area and regional experts in workforce needs. Appendix III lists the members of the advisory board and their backgrounds. Selected individuals were invited to group meetings to review findings, discuss their perspectives on needs, and offer suggestions. Representatives of Nippondenso, Martin-Marietta, TVA and the Tennessee Technology Foundation participated in this phase. Follow-up included team visits to work sites. For many team members, these visits were the first industry visits they had ever made. To actually see how the identified skills are used on site was an extremely important activity.

Professional development activities were instrumental in developing the common frame of reference and team mentality needed for the next phase, curriculum development. Two decisions guided participation: First, a critical mass of team members (at least 2) participated in each activity. The objective was to encourage discussion of multiple perspectives of each activity and allow thorough coverage of major related conferences and events. Second, immediately following each activity, the participants came back and debriefed other team members. Particular attention

was paid to how what was learned related to what was already known and to developing a resource list of other colleges that had done similar things.

Phase II of this project involved curriculum development. At this point the team had discovered/experienced a number of innovative programs throughout the country that were relevant to the Workforce project. Among them were the following:

- Texas State Technical College's Applied Learning Program
- CORD's Transformation Curriculum and Materials
- TVA's Valley Resource Center
- The University of Tennessee's MBA Curriculum
- The Agency for Instructional Technology's Course Materials

Seven elements were particularly engaging to the team:

- Applied Learning
- Technology Enhanced Instruction
- Collaborative/Learner-Based Instruction
- Integrated Curricula
- Team Teaching
- Learning Lab Environments
- Incorporating Student Services Activities into the Curriculum

The following is a brief review of each:

Applied Learning, a concept pioneered by the Center for Occupational Research and Development, postulates that learners learn best by beginning with concrete and moving to theoretical concepts. The Tech Prep movement is based around Applied Learning.

Technology Enhanced Instruction is just what it sounds like: using the power of video, audio, and computer-based teaching methods and materials to enhance understanding and customize instruction.

Collaborative/Learner Based Instruction uses the workplace model of working in groups and assisting each other in a classroom environment. Learning goals and experiences are built around existing learner competencies.

Integrated Curricula is a method of instruction where each activity reinforces learning in other areas. For example, a group of learners is assigned a hypothetical work problem to solve. The solution involves mathematical problems solving, utilizing spreadsheets and calculators, and communicating results to others. Instructors responsible for the math, computer, writing, and speech components of the curriculum collaborate the focus of instruction and activities that build the skills necessary for successful solution. Each learning exercise reinforces the others. Simultaneously, library team members provide guidance and support in identifying resources that can

help the learner address problems. Resources include traditional print sources, videotapes, computer software, tutorials to teach additional software functions to enhance presentation materials, and resource people with skills in the problem area (or wide-area-network access such as Internet to query other groups with similar problems).

Team Teaching is exactly what it sounds like: Groups of faculty working together to deliver instruction and enhance/support each other.

Learning Lab Environments are resource rooms/stations that provide access to a wide variety of materials for student learning: networked computers with basic skills and computer literacy training modules; videotapes; automated card catalogues for accessing traditional library materials; and lab assistance.

A final aid deemed critical by the team is student services support. Learning to develop goals, handle stress, explore career options, and manage time are some of the key areas handled by the college's counseling center. One unique aspect is that counseling support is incorporated into the curriculum itself.

Having explored methods and established the terminal objectives outlined in Appendix IV, the team began to identify those specific competencies and resource materials necessary to support both classroom instruction and Learning Lab activities.

Since the objective of the program is to implement a curriculum to address both basic academic literacy issues and workforce basic skills, the team began by defining "basic skills." This task was relatively easy since Tennessee has a state-wide definition. These basic academic skills provide the foundation for learning. The second phase was to determine workplace basic skills. Preliminary exploratory research revealed consensus among local employers that the ASTD-defined skills were key.

The team decided to use these competencies as a framework. A survey was developed (see Appendix V) to confirm competencies and to establish the relative importance of each skill area. The advisory committee reviewed the survey for completeness. A broader distribution of the survey is to be distributed by August 1, 1994. The sampling frame covers 500+ employers in the Knox and Blount county areas.

Resource materials reviewed include CORD and IAT materials as well as numerous computer-based education products. Computers and other instructional technology are viewed as critical resources for this project. Much time and effort were spent determining what equipment and software to use and how it should be configured for maximum flexibility. Appendix VI outlines what was finally settled on.

The main learning environment contains multi-purpose desk/computer workstations housing networked 486 PC's. These systems are linked both locally via LANSCHOOL and PODIUM software and college-wide via the college's VAX backbone and

Pathworks cards within the PC's. The latter assures hassle-free use by faculty and learners and makes remote one-to-four station "learning centers" possible in the college's Educational Resource Center, the faculty Professional Development Center, and eventually on-work sites of partners. The local networks link the learners to each other and to the instructor. A computerized podium called Prodium, designed and developed by team member, Greg Walters, facilitates interactive instruction. Screens can be identified and sent to all or specific students from the Prodium; also, the instructor can view student work unobtrusively, and classroom station can be captured and analyzed by the instructor on a real-time, instantaneous basis, allowing instructors to modify presentations to meet class needs as they occur.

Computer projection systems, VCR's, and one CD ROM station complete computer facilities within the lab. Furnishings within the lab avoid the traditional inflexibility of computer workstations by incorporating monitor-under-glass office-type desk units. When the unit is not being used for computer applications, it functions as a regular desk.

Computer-based instruction and instructional design specialists matched the competencies identified by the team and materials available from software/courseware vendors. Once they had identified the "best fit" products, team members traveled to installations to review, train on, and evaluate options. Based on this analysis, two products were selected: LearningPlus as the basic skills package and Plato for more advanced skills, such as algebra. Because Pellissippi is a part of the Tennessee Board of Regents system and the system has a DEC-based computer environment, computer-based teaching materials are available on the campus network, allowing the team to use these resources in the classroom and in the Educational Resource Center. The college is using Pathworks cards to allow PC's to be attached to the VAX system, making utilization of CBE hassle-free for both faculty and learners.

In order to take advantage of the multiple learning resources available and to gain the computer literacy skills the workforce now demands, learners begin their program by mastering Microsoft Works. The objectives here are to provide a "toolbox" of skills that can be used to support individualized learning plans, provide the means for effective enhancement of written and oral communication projects, provide access to information resources such as Internet, and harness the power of computers for problem solving.

Curriculum

Developing a curriculum that incorporated the seven elements (applied learning, technologically enhanced instruction, collaborative learning, integrated curricula, team teaching, learning lab environment, and integrated student services) is one of the more challenging aspects of this project. The team's decision to include ALL seven rather than focus on one or two elements made the project both exciting AND complex. A number of decisions were made early-on that facilitated this plan.

First, the decision was made to use Microsoft Works to familiarize the students with computer functions and to provide a tool kit that would allow them to use basic applications functions (wordprocessing, spreadsheet, and data base) from the beginning. The rational for this decision was that many of the resources available to assist students are computer based. The decision to use Microsoft Works was made because the software is easy to use, is integrate and has an excellent tutorial component.

Second, to assure the integration across disciplines, the team decided on a series of themes for each week. Appendix VII outlines these themes. Major "milestones," or interdisciplinary group projects, occur at three points during the semester. These milestones are designed to provide feedback and "seat" the learning that has occurred to that point.

Third, each faculty member developed an exhaustive lesson plan that included resources as well as objectives and activities. THEN THE GROUP worked to fine tune the individual plans and corne up with one master program. The objective was to deliver just-in-time instruction, collaboratively. For example, the communications teacher had scheduled some time to teach students specific wordprocessing functions necessary to format a particular assignment. The computer science teacher interjected: "You do NOT need to schedule that time. I teach that to the students. WHEN DO THEY NEED TO KNOW IT?" and adjusted his plan to her needs. **This type of collaboration promises significant improvement in teaching and learning.** The team developed a special name for this approach: JITTER (Just-in-time teaching, technology, and educational resources). The idea is to deliver content in context and reinforce that learning across the curriculum.

Fourth, key learning objectives were decided upon very early in the project. This decision allowed the group to focus on how they were going to build these competencies into their portion of the project AND evaluate resources from a common frame of reference. The original proposal provided initial structure and parameters, but it was significantly expanded over the course of program development. These key objectives were the basis of the Central Competencies that guide the master program. (See Appendix VIII.)

Instruction

Instructional time is divided into the following two components: (1) Teams of teachers work with the students as a group for three hours each morning. An example of the types of topics covered is attached as Appendix IX. (2) Afternoons are devoted to less structured activities. Working in teams of five or groups of 10, the students either rotate through group activities OR spend time working on areas of individual weaknesses. As the semester progresses, rotations are fewer and more time is spent in group activities and individualized skill building.

The learner-directed aspect of this program drives much of the "how" of instruction.

Students develop personal and academic goals, and faculty/staff are responsible for assisting them in determining HOW to accomplish these goals or WHERE to go for more information/help in achieving these goals. While there are minimum levels of competency that ALL students must reach built into the program, there is, by design, flexibility for the students to define other learning experiences that will assist them in reaching goals. The responsibility for the team of teachers is to serve as coaches and an easily available source of expertise.

lbogaty/workforce.training

Executive Summary
Workforce Innovation Center of Emphasis

The purpose of the Workforce Innovation Center of Emphasis is to provide a bridge program to allow working adults to gain prerequisite academic and personal skills necessary to successfully enter college and/or the workforce.

To accomplish this goal, a team of fifteen Pellissippi State faculty and staff developed a curriculum process and identified curricular resources necessary to implement a technologically enhanced, interdisciplinary, self-paced program. Assisting the team in ensuring that workforce needs are met is an advisory committee of ten area professionals representing employers, employment specialists, and educators from other colleges.

The three-year project is funded through the Tennessee Higher Education Commission's Center of Emphasis grant program. Objectives are,

- Address the seven skill areas identified by the American Society of Training and Development[28] in a comprehensive, interdisciplinary, applied method by developing a curriculum that addresses areas identified, incorporates basic academic skills and competencies to enter college, establishes pre- and post-tests to assure mastery.

- Enhance faculty expertise in alternative teaching styles, including the use of instructional technology, case method, case writing, and project and presentation methods.

- Develop a learning environment for career technical students that build on applied Tech Prep programs and work experience.

- Integrate student support services directly into the applied curriculum.

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[28]Competencies are learning to learn skills, 3 R's (reading, writing and arithmetic), communication skills (oral and written), creative thinking/problem solving skills, self esteem/goal setting/personal career development skills, interpersonal and negotiation skills, organization/leadership skills.

PROJECT OBJECTIVES

As a result of the Workforce Project, you will accomplish objectives in four areas:

I. Personal Development
You will
- A. Identify your learning style
- B. Identify your workforce experience
- C. Understand your personal rights and responsibilities
- D. Develop career direction
- E. Improve time-management skills
- F. Enhance personal motivation

II. Social Skills
You will demonstrate
- A. Teamwork skills
- B. Communication skills
- C. Leadership skills
- D. Decision-making skills
- E. Ethical conduct skills
- F. An appreciation for diversity

III. Basic Academic Skills
You will acquire
- A. Math, English, and science skills to the appropriate college entrance level
- B. Keyboarding skills to 25 words per minute
- C. Problem solving skills
- D. Library/information literacy skills
- E. Technological and computer skills

IV. Learning to Learn
You will develop
- A. Study skills
- B. Personal problem solving skills
- C. Communication skills
- D. Skills in functioning in social/business institutions
- E. Skills in broadening your global perspective

APPENDIX LISTING

I. AACC Survey Instrument - Workforce Training

II. Bibliography - Workforce Innovation Project

III. Advisory Committee

IV. Terminal Objective

V. Workforce Basic Skills Survey

VI. Equipment Specifications

VII. Themes: Workforce Innovation

VIII. Central Competencies

IX. Weekly Schedule

APPENDIX I

AACC Survey Instrument - Workforce Training

SURVEY OF COMMUNITY COLLEGE TRAINING PROGRAMS
FOR EMPLOYEES OF BUSINESS, INDUSTRY, LABOR & GOVERNMENT

Dear Colleague:

The League for Innovation in the Community College and its corporate partners in the Community College Business and Industry Alliance are collaborating to determine the extent to which community colleges nationwide are providing training programs and services for employees of business, industry, labor organizations, and government. We need the help of professionals like you in this survey of all community colleges in the United States to determine if there are common solutions to common problems encountered by colleges in providing such training that might be addressed by policymakers. Your response is critical to ensure representative results.

We thank you in advance for taking the time to answer the survey questions as completely as you can. In all cases, please provide the best answer to the question. If necessary, please estimate rather than leave questions unanswered.

While you may complete the survey anonymously if you wish, we urge you to provide your name and address so that we can include you on a list of key contacts for community college workforce training programs. We would also be pleased to send you a summary of survey results. Please don't hesitate to call the League office, (714) 855-0710, if we can be of help. Thanks again.

Terry O'Banion, Executive Director
League for Innovation in the Community College

PLEASE RETURN THE COMPLETED SURVEY BY OCTOBER 15, 1992, TO:

National Computer Systems
1201 S. Alma School Road
Suite 9500
Mesa, AZ 85210

1. **Does your college provide workforce training programs and services for employees of business, industry, labor organizations, or government?**
   - ○ yes (IF YES, please complete the rest of the survey.)
   - ○ no (IF NO, please skip to question #20 and answer questions #20-22.)

2. **Which of the following best describes your college's program for providing workforce training programs and services intended specifically for employees of business, industry, labor organizations, or government?**
   - ○ The college provides workforce training designed specifically to meet the needs of employers on a wide variety of topics using an array of delivery formats and arrangements through an office, unit, or department organized specifically for that purpose.
   - ○ The college provides some training usually using regular college courses and programs; however, some training programs are tailored to meet employer needs.
   - ○ Employees of local business, industry, and government receive training in college programs that are available to all students, but none are designed specifically for them. *(If this response is marked, please skip to questions #20-22.)*
   - ○ The college does not provide workforce training to meet the needs of employers. *(If this response is marked, please skip to questions #20-22.)*
   - ○ Other, please describe: _____

ORGANIZATION

3. **Is all or most of the workforce training designed specifically to meet the needs of employers offered by the college coordinated by a single office/unit/department?** ○ yes ○ no

   IF YES:

   a. *Name of the Office/Unit/Department* _____

   b. *Title of Principal Administrator:* ○ provost ○ vice president ○ dean ○ executive director ○ director ○ coordinator ○ other, please specify _____

   c. *Title/Level of Person to Whom Principal Administrator Reports:* ○ president/chancellor ○ provost ○ vice president ○ dean ○ executive director ○ director ○ coordinator ○ other, please describe: _____

   d. *Division/Branch of College in which the Training Office is Organized and Reports* (Mark only one.)
   - ○ none, training office is its own division/entity
   - ○ continuing education/community service
   - ○ institutional advancement/development
   - ○ academic
   - ○ student services
   - ○ administrative services
   - ○ other, please describe _____

LEVEL OF ACTIVITY

During the 1991-92 academic year, what was your college's approximate level of activity with regard to providing training designed specifically to meet the needs of employers? Please provide estimates for the following questions.

4. **How many employers did your college serve?** ○ none ○ 1-9 ○ 10-24 ○ 25-49 ○ 50-99 ○ 100-199 ○ 200+

5. **How many employees received training?** ○ none ○ 1-99 ○ 100-499 ○ 500-999 ○ 1,000-4,999 ○ 5,000-9,999 ○ 10,000-14,999 ○ 15,000-19,999 ○ 20,000-24,999 ○ 25,000+

6. **What was the total amount of gross revenue generated by such training activities?**
   - ○ none
   - ○ $1-49,999
   - ○ $50,000-99,999
   - ○ $100,000-499,999
   - ○ $500,000-999,999
   - ○ $1-4.9 million
   - ○ $5-9.9 million
   - ○ $10+ million

PLEASE DO NOT MARK IN THIS AREA

CHARACTERISTICS OF EMPLOYERS SERVED

7. *Size.* What percentage of the total number of employees trained by the college during 1991-92 was employed by organizations of the following sizes? *Total should be 100 percent.*

	percent										
a. less than 25 employees	0	10	20	30	40	50	60	70	80	90	10
b. 25-99 employees	0	10	20	30	40	50	60	70	80	90	10
c. 100-499 employees	0	10	20	30	40	50	60	70	80	90	10
d. 500-999 employees	0	10	20	30	40	50	60	70	80	90	10
e. 1,000-2,499 employees	0	10	20	30	40	50	60	70	80	90	10
f. 2,500-9,999 employees	0	10	20	30	40	50	60	70	80	90	10
g. 10,000+ employees	0	10	20	30	40	50	60	70	80	90	10

8. *Type of Industry.* What percentage of the total number of employees trained by the college during 1991-92 was employed by organizations of the following types? *Total should be 100 percent.*

	percent										
a. agriculture	0	10	20	30	40	50	60	70	80	90	100
b. manufacturing	0	10	20	30	40	50	60	70	80	90	100
c. construction	0	10	20	30	40	50	60	70	80	90	100
d. health services	0	10	20	30	40	50	60	70	80	90	100
e. other services	0	10	20	30	40	50	60	70	80	90	100
f. wholesale/retail trade	0	10	20	30	40	50	60	70	80	90	100
g. finance/insurance/real estate	0	10	20	30	40	50	60	70	80	90	100
h. transportation/communications/utilities	0	10	20	30	40	50	60	70	80	90	100
i. government, including education	0	10	20	30	40	50	60	70	80	90	100

9. *Major Clients.* Please list your five largest clients in 1991-92. _____

_____

TOPICS AND FORMATS OF TRAINING PROVIDED

10. *Topics.* What percentage of the total number of employees trained by the college during 1991-92 received training in the following areas? *Total should be 100 percent.*

	percent										
a. workplace literacy (basic reading, writing, and math)	0	10	20	30	40	50	60	70	80	90	100
b. English as a second language	0	10	20	30	40	50	60	70	80	90	100
c. supervisory, management training	0	10	20	30	40	50	60	70	80	90	100
d. total quality management	0	10	20	30	40	50	60	70	80	90	100
e. communications skills, interpersonal relations, etc.	0	10	20	30	40	50	60	70	80	90	100
f. computer literacy, software or hardware training, etc.	0	10	20	30	40	50	60	70	80	90	100
g. statistical process control, CIM, etc.	0	10	20	30	40	50	60	70	80	90	100
h. job-specific technical training	0	10	20	30	40	50	60	70	80	90	100
i. courses leading to licensure	0	10	20	30	40	50	60	70	80	90	100
j. other, please list [ ]	0	10	20	30	40	50	60	70	80	90	100

11. *Instructional Methodologies.* What percentage of the total number of employees trained by the college during 1991-92 received training using the following methodologies? *Total should be 100 percent.*

	percent										
a. traditional classroom lecture and discussion	0	10	20	30	40	50	60	70	80	90	100
b. hands-on training or workshops	0	10	20	30	40	50	60	70	80	90	100
c. computer-based, independent learning systems	0	10	20	30	40	50	60	70	80	90	100
d. distance learning/telecourses	0	10	20	30	40	50	60	70	80	90	100
e. others, please list [ ]	0	10	20	30	40	50	60	70	80	90	100

12. *Arrangements.* What percentage of the total number of employees trained by the college during 1991-92 received training provided by the following arrangements? *Total does NOT need to be 100 percent.*

	percent										
a. college credit courses	0	10	20	30	40	50	60	70	80	90	100
b. customized training developed for specific clients	0	10	20	30	40	50	60	70	80	90	100
c. outside the service area of the college	0	10	20	30	40	50	60	70	80	90	100

FACILITIES AND STAFFING

13. *Facilities.* What percentage of the total number of employees trained by the college during 1991-92 received training using the following types of facilities? *Total should be 100 percent.*

	percent										
a. on-campus facilities designed for workforce training	0	10	20	30	40	50	60	70	80	90	100
b. regular on-campus facilities as available	0	10	20	30	40	50	60	70	80	90	100
c. off-campus facilities provided by the college	0	10	20	30	40	50	60	70	80	90	100
d. facilities provided by employers	0	10	20	30	40	50	60	70	80	90	100
e. others, please list [ ]	0	10	20	30	40	50	60	70	80	90	100

14. *Staffing.* What percentage of the total number of employees trained by the college during 1991-92 received training from the following types of staff? *Total should be 100 percent.*

	percent										
a. college faculty as part of regular workload	0	10	20	30	40	50	60	70	80	90	100
b. college faculty on supplemental contracts or overload	0	10	20	30	40	50	60	70	80	90	100
c. trainers hired on a per contract basis	0	10	20	30	40	50	60	70	80	90	100
d. full-time trainers on staff	0	10	20	30	40	50	60	70	80	90	100
e. others, please list [ ]	0	10	20	30	40	50	60	70	80	90	100

FINANCING WORKFORCE TRAINING

15. *Funding Sources.* What percentage of the total operating budget of the training office/unit in 1991-92 came from the following sources? *Total should be 100 percent.*

	percent										
a. college operating funds	0	10	20	30	40	50	60	70	80	90	100
b. state or federal grants	0	10	20	30	40	50	60	70	80	90	100
c. tuition or fees paid by individuals	0	10	20	30	40	50	60	70	80	90	100
d. contracts for training paid by employers	0	10	20	30	40	50	60	70	80	90	100
e. others, please list [ ]	0	10	20	30	40	50	60	70	80	90	100

16. *Contracts.*

a. **What percentage of the total gross revenue generated by training in 1991-92 was provided under formal contractual agreement between the college and employer?**	percent										
	0	10	20	30	40	50	60	70	80	90	100
b. **What percentage of these contracts was repeat business?**	0	10	20	30	40	50	60	70	80	90	100

c. **What was the average length of these contracts?** ○ less than 1 week ○ at least one week but less than a month ○ 1-3 months ○ 4-6 months ○ 7-12 months ○ 1-2 years ○ longer than 2 years

d. **What was the length of the longest training contract?** ○ less than 1 week ○ at least one week but less than a month ○ 1-3 months ○ 4-6 months ○ 7-12 months ○ 1-2 years ○ longer than 2 years

e. **What was the average value of these contracts?** ○ $1-9,999 ○ $10,000-49,999 ○ $50,000-99,999 ○ $100,000-249,999 ○ $250,000-999,999 ○ $1-5 million ○ $5 million+

17. *Payment.* **Which of the following payment options are available to employers to pay for contracted training?** (Mark all that apply.)

- ☐ up-front payment before training begins
- ☐ billing/payment upon beginning of training
- ☐ billing/payment upon completion of training
- ☐ payment by installment plan
- ☐ others, please list [ ]

18. *Pricing.* **Which of the following factors are included in determining the price of training charged an employer?** (Mark all that apply.)

- ☐ standard calculation based upon hourly/unit rates
- ☐ cost recovery of direct costs
- ☐ cost recovery of all costs, including indirect costs
- ☐ prices of competitors and market conditions
- ☐ cost recovery for investment in curriculum development, equipment, etc.
- ☐ others, please list [ ]

PERCEPTIONS OF EFFECTIVENESS

19. **How effective do you believe your college has been in . . .**	*very ineffective*				*very effective*
a. providing training for existing clients?	1	2	3	4	5
b. meeting the training needs of large employers in the college's service area?	1	2	3	4	5
c. meeting the training needs of small and medium-sized employers in the service area?	1	2	3	4	5
d. meeting the overall workforce training needs of the college's service area?	1	2	3	4	5
e. generating revenue from training contracts to support other college programs?	1	2	3	4	5

OBSTACLES TO PROVIDING WORKFORCE TRAINING

20. **What are the greatest obstacles to your college's effectively providing workforce training to meet the needs of employers?**

	not an obstacle	minor obstacle	major obstacle
College Policies and Support			
a. opposition and/or lack of interest from college leadership	1	2	3
b. opposition and/or lack of interest from college faculty	1	2	3
c. inadequate budget to support operating budget of training office/unit	1	2	3
d. lack of experienced trainers or appropriate expertise to provide training	1	2	3
e. inadequate facilities to support training programs	1	2	3
f. inadequate support for curriculum development and other up-front costs	1	2	3
g. policies that subject all training to college curriculum review processes	1	2	3
h. policies or faculty contracts that prohibit/discourage the use of faculty as trainers	1	2	3
i. policies or faculty contracts that prohibit hiring external professional trainers	1	2	3
j. business office accounting and budgeting practices that hamper training activity	1	2	3
k. policies that prohibit training office from incurring short-term indebtedness	1	2	3
State Policies			
l. policies that prohibit colleges from providing training	1	2	3
m. policies that prohibit use of public funds to support training	1	2	3
n. policies that prohibit out-of-service-area activity or promotion	1	2	3
Competition and Market			
o. inability to compete in quality with other providers	1	2	3
p. inability to compete in price with other providers	1	2	3
q. difficulty in gaining visibility as a provider of training	1	2	3
r. difficulty in gaining credibility as a provider of training	1	2	3
s. no market for training services among local business, industry, labor, or government	1	2	3
t. inability of local companies or organizations to afford training costs	1	2	3
u. others, please list other major obstacles to provide training: [ ]	1	2	3

PROPOSED WORKFORCE TRAINING FINANCING PROGRAMS

21. **Assume that credit was available under reasonable terms at attractive interest rates to community colleges and the employers they serve to support delivery of workforce training for employees or employers. Please rate the importance of each of the following proposed programs to community colleges. Then, rate the likelihood that your college or its clients might participate in such programs.**

	low				*high*
a. Loan programs made available to colleges to underwrite start-up costs of training programs, such as curriculum development, marketing, promotion, etc.					
importance of program for community college training programs	1	2	3	4	5
likelihood your college would participate	1	2	3	4	5
b. Loan programs made available to colleges to underwrite ongoing operating costs of training programs, such as full-time staff, support services, etc.					
importance of program for community college training programs	1	2	3	4	5
likelihood your college would participate	1	2	3	4	5
c. Loan programs made available to colleges to finance facilities construction and/or equipment acquisition to support training programs					
importance of program for community college training programs	1	2	3	4	5
likelihood your college would participate	1	2	3	4	5
d. Loan programs made available to employers to finance training costs for employees					
importance of program for community college training programs	1	2	3	4	5
likelihood employer-clients of your college would participate	1	2	3	4	5

CHARACTERISTICS OF YOUR COLLEGE

22. **Which characteristics best describe your college?**

a. ***Type*** (Mark only one of the following.)
- ☐ comprehensive community college
- ☐ technical institute
- ☐ junior college
- ☐ two-year branch campus of a four-year institution

b. ***Location*** (Mark only one of the following.)
- ☐ urban
- ☐ suburban
- ☐ rural

c. ***Control*** (Mark only one of the following.)
- ☐ public
- ☐ private

d. ***Organization*** (Mark only one of the following.)
- ☐ single campus college
- ☐ college, part of multi-college district
- ☐ campus or center, part of multi-campus district
- ☐ district office

e. ***Enrollment*** (fall 1991 student headcount enrollment in credit courses; mark only one of the following.)
- ☐ 1-2,499
- ☐ 2,500-4,999
- ☐ 5,000-9,999
- ☐ 10,000-24,999
- ☐ 25,000+

f. ***College General Fund Operating Budget*** (1991-92 fiscal year mark only one.)
- ☐ less than $5 million
- ☐ $5-9.9 million
- ☐ $10-19.9 million
- ☐ $20-49.9 million
- ☐ $50+ million

g. ***Operating Budget for Office/Unit Providing Training Programs and Services*** (1991-92 fiscal year; mark only one.)
- ☐ no separate budget
- ☐ less than $50,000
- ☐ $50,000-99,999
- ☐ $100,000-199,999
- ☐ $200,000-499,999
- ☐ $500,000+

h. ***Years Office/Unit Providing Training Has Been in Formal Operation*** (Mark only one.)
- ☐ less than one year
- ☐ 1-2 years
- ☐ 3-5 years
- ☐ more than 5 years
- ☐ no office/unit currently in operation, none planned
- ☐ no office/unit currently in operation, but one planned to begin operation within next 12 months

i. ***State*** (two-letter postal code): _____

SURVEY RESULTS AND KEY CONTACTS

We are developing a list of key contacts in community colleges for providing training programs and services for employees of business, industry, labor organizations, and government. If you would like to be included on that list, please mark the appropriate item and provide your name and address. Also, please indicate if you would like to receive a summary of survey results.

☐ **I wish to be included on a list of key contacts.** ☐ **I wish to receive a summary of results.**

Name _____ Title _____

College _____

Street _____ City/State/Zip code _____

Telephone _____ Fax _____

Thank you for taking the time to complete this important survey.

USE THE ENCLOSED BUSINESS RESPONSE ENVELOPE TO RETURN THE SURVEY.

PLEASE DO NOT MARK IN THIS AREA

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APPENDIX II

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APPENDIX III

Advisory Committee

WORKFORCE INNOVATION
ADVISORY COMMITTEE - 93/94
UPDATED: **July 21, 1993**

Mr. Gary Booth
Senior Specialist
Educational Development
Nippondenso Tennessee, Inc.
1720 Robert C. Jackson Drive
Maryville, TN 37801-3748
Phone: 982-7000

Mr. Lee Grant
Labor Market Anaysis
Department of Employment Security
415 Walnut, P. O. Box 831
Knoxville, TN 37901
Phone: 594-6003

Ms. Jackie Holloway
102 Artecia Drive
Oak Ridge, TN 37830
Phone: 574-0840/576-6739

Ms. Kathleen McKenzie
3245 LaGrange Drive
Maryville, TN 37804
Phone: 984-5073

Mr. Anthony Morreale
Vice President Executive Staffing
Phillips Consumer Electronics
P.O. Box 14810
Knoxville, TN 37914
Phone: 691-1256

Dr. Chrystal Partridge
Executive Director
TOICC
500 James Robertson Parkway
Nashville, TN 37245-1600
Phone: (615) 741-6451

Dr. David Patterson
Tennessee Technology Foundation
Pellissippi Campus
10915 Hardin Valley Road
Knoxville, TN 37933
Phone: 694-6772

Ms. Kimberly R. Pearman
1404 Overton Lane
Knoxville, TN 37923-1243
Phone: 966-6147

Dr. Ron Shipe - OCH1G-K
Tennessee Valley Authority
400 W. Summit Hill Drive
Knoxville, TN 37902
Phone: 632-2101

Dr. John W. Wooten
Science Education and External Relations
Oak Ridge National Lab
P. O. Box 2008
Oak Ridge, TN 37831-6496
Phone: 576-9495

APPENDIX IV

Terminal Objective

PROJECT OBJECTIVES

As a result of the Workforce Project, you will accomplish objectives in four areas:

I. Personal Development
You will
- A. Identify your learning style
- B. Identify your workforce experience
- C. Understand your personal rights and responsibilities
- D. Develop career direction
- E. Improve time-management skills
- F. Enhance personal motivation

II. Social Skills
You will demonstrate
- A. Teamwork skills
- B. Communication skills
- C. Leadership skills
- D. Decision-making skills
- E. Ethical conduct skills
- F. An appreciation for diversity

III. Basic Academic Skills
You will acquire
- A. Math, English, and science skills to the appropriate college entrance level
- B. Keyboarding skills to 25 words per minute
- C. Problem solving skills
- D. Library/information literacy skills
- E. Technological and computer skills

IV. Learning to Learn
You will develop
- A. Study skills
- B. Personal problem solving skills
- C. Communication skills
- D. Skills in functioning in social/business institutions
- E. Skills in broadening your global perspective

APPENDIX V

Workforce Basic Skills Survey

Employer Survey of College-Level Entry Skills

Pellissippi State Technical Community College

Please indicate the importance of each the skills listed in this survey for an entry-level employee in your company. These skills are prerequisites for entry into most college-level courses as established by the Tennesse Board of Regents. Please refold survey so the address shows, staple and return by U.S. Mail.

Survey continued . . .

Importance	Skills
	Studying: The ability of the employee to . . .
☐Low ☐Med. ☐High	set learning/job goals and priorities consistent with a stated job-related requirements.
☐Low ☐Med. ☐High	establish surroundings and habits conducive to learning independently or with others.
☐Low ☐Med. ☐High	follow a schedule that accounts for both short- and long-term projects.
☐Low ☐Med. ☐High	locate and use resources external to the immediate work environment (e.g., libraries, computers, interviews, and direct observation).
☐Low ☐Med. ☐High	incorporate knowledge from such sources into the learning/job-development process.
☐Low ☐Med. ☐High	develop and use general and specialized vocabularies for reading, writing, speaking, listening, computing, and studying.
☐Low ☐Med. ☐High	understand and to follow customary instructions in order to recall, comprehend, analyze, summarize, and report the main ideas from reading, presentations, and other experiences.
☐Low ☐Med. ☐High	synthesize knowledge and apply to new situations.
☐Low ☐Med. ☐High	prepare for and devise strategies to satisfy job-related assessments including various examination types, job performance, contribution to team projects, simulations, and peer evaluations.
☐Low ☐Med. ☐High	accept and learn from constructive criticism.

Pellissippi State Technical Community College
Dean of Applied Sciences/Technologies
P.O. Box 22990
Knoxville, TN 37933-0990

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Dean of Applied Sciences/Technologies
P.O. Box 22990
Knoxville, TN 37933-0990

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Importance	Skills
	Reading: The ability of the employee to read job-related information and . . .
☐Low ☐Med. ☐High	summarize main and subordinate ideas.
☐Low ☐Med. ☐High	identify point of view and tone of the author.
☐Low ☐Med. ☐High	interpret inferred and literal meaning.
☐Low ☐Med. ☐High	differentiate his or her opinions and assumptions from the writer's.
☐Low ☐Med. ☐High	vary reading speed and method according to the type of material and his or her purpose.
☐Low ☐Med. ☐High	use features such as table of contents, preface, introduction, titles and subtitles, index, glossary, appendix, bibliography, etc.
☐Low ☐Med. ☐High	define unfamiliar words.
	Writing: The ability of the employee to . . .
☐Low ☐Med. ☐High	conceive ideas about a topic for the purpose of writing.
☐Low ☐Med. ☐High	organize, select, and relate ideas and develop them in coherent paragraphs.
☐Low ☐Med. ☐High	write Standard English sentences with correct structure, grammar, word choice, and spelling.
☐Low ☐Med. ☐High	vary writing style for different readers and purposes.
☐Low ☐Med. ☐High	improve his or her writing by restructuring, correcting errors, and rewriting.
☐Low ☐Med. ☐High	write a research report with appropriate primary and secondary sources.
☐Low ☐Med. ☐High	quote, paraphrase, and summarize accurately.
☐Low ☐Med. ☐High	cite sources properly.
	Speaking and Listening: The ability of the employee to . . .
☐Low ☐Med. ☐High	engage critically and constructively in the exchange of ideas.
☐Low ☐Med. ☐High	answer and ask questions coherently and concisely.
☐Low ☐Med. ☐High	follow spoken instructions.
☐Low ☐Med. ☐High	identify and comprehend the main and subordinate ideas in presentations and discussions.
☐Low ☐Med. ☐High	report accurately what others have said.
☐Low ☐Med. ☐High	conceive and develop ideas about a topic for the purpose of speaking to a group.
☐Low ☐Med. ☐High	choose and organize related ideas and present them clearly in Standard English.
☐Low ☐Med. ☐High	evaluate presentations by others.
☐Low ☐Med. ☐High	vary his or her use of spoken language to suit different situations.
	Mathematics: The ability of the employee to . . .
☐Low ☐Med. ☐High	add, subtract, multiply, and divide whole numbers.
☐Low ☐Med. ☐High	add, subtract, multiply, and divide fractions.
☐Low ☐Med. ☐High	add, subtract, multiply, and divide decimals.
☐Low ☐Med. ☐High	add, subtract, multiply, and divide negative and positive numbers.
☐Low ☐Med. ☐High	make and use measurements in traditional units (i.e., inches, feet, ounces, pounds, etc.).
☐Low ☐Med. ☐High	make and use measurements in metric units.
☐Low ☐Med. ☐High	use integers, fractions, and decimals.
☐Low ☐Med. ☐High	use ratios, proportions, and percentages.
☐Low ☐Med. ☐High	use roots and powers.
☐Low ☐Med. ☐High	use algebra.
☐Low ☐Med. ☐High	use geometry.
☐Low ☐Med. ☐High	make estimates and approximations, and to judge the reasonableness of a result.
☐Low ☐Med. ☐High	formulate and solve a problem in mathematical terms.
☐Low ☐Med. ☐High	select and use appropriate approaches and tools in solving problems (i.e., mental computation, trial and error, paper-and-pencil techniques, calculator, and computer).
☐Low ☐Med. ☐High	use elementary concepts of probability and statistics.
	Reasoning: The ability of the employee to . . .
☐Low ☐Med. ☐High	identify and formulate problems, propose and evaluate ways to solve them.
☐Low ☐Med. ☐High	recognize and use inductive and deductive reasoning.
☐Low ☐Med. ☐High	recognize fallacies in reasoning.
☐Low ☐Med. ☐High	draw and defend reasonable conclusions from information found in various sources, whether written, spoken, or displayed in tables and graphs.
☐Low ☐Med. ☐High	comprehend, develop, and use concepts and generalizations.
☐Low ☐Med. ☐High	distinguish between fact and opinion.

Survey continued on reverse.

APPENDIX VI

Equipment Specifications

WIN FACILITIES AND EQUIPMENT

- 28 486/33Mhz VGA Student PC'S housed in ergonomic desks
- 1 486/66Mhz Multimedia Teacher station
- 2 HP4 Laser Printers on a que FIFO server
- 2 Macintosh IIvx Computers w/CD-ROM
- 1 OCR UMAX Flat-bed high resolution Scanner
- 1 Teacher Station Color Thermal Printer
- 6 Student TV/VCR Systems and 1 teacher station system
- 1 Stereo/Audio Amplified Speaker System
- 1 Laser disk player w/Computer interface
- 1 CD-ROM drive (audio, video and program capable)
- 1 VHS-tape system
- 1 ELMO camera real-time viewing system with audio
- 36 Pathwork connections to the VAX/InterNet environment
- 2 VAX connected printers (1 line and 1 laser)

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APPENDIX VII

Themes: Workforce Innovation

WIN
WORKFORCE INNOVATION
Fall Semester 1993

General Morning Structure

Morning Session (9:00-12:00) (approximate times)

★	40 minutes	Math	
★	40 minutes	Principles of Technology	(Study Skills integrated)
★	40 minutes	Communications	
★	40 minutes	Computer Training	
★	10 minutes	Break	
★	10 minutes	Other	

Instructors will give general guidelines about how much time students should spend on each homework assignment.

General Afternoon Structure

Afternoon Session (1:00-4:40)--rotations/five teams of four students

Open lab in B149: MWF 1:00-2:50 and TR 3:00-5:50
Other sessions in B-120, ERC open lab, Learning Center

- ★ Principles of Technology labs
- ★ Math labs
- ★ Communication video (AIT/CORD)
- ★ CST software
- ★ Principles of Technology software
- ★ Software for developmental skills (Learning Plus, PLATO, etc.)
- ★ Videos (AIT, PT, etc.)
- ★ Word Processing Projects
- ★ Individual (student) Planning Time
- ★ Assessments/Career Center
- ★ Field trips/speakers
- ★ Library instruction/research
- ★ Team projects

Weekly Themes

Week 1	Orientation, Introduction, and Assessment
Week 2	Awareness and Team Building
Week 3	Structuring Good Work Habits
Week 4	Real World Problem Solving
Week 5	Milestone 1: Career Research Project
Week 6	Rights and Responsibilities
Week 7	Dynamics of Working and Living
Week 8	Academic Competencies
Week 9	Competence in Technologies
Week 10	Milestone 2: Career Action Plan
Week 11	Global Competition
Week 12	Reaching Your Potential
Week 13	Effective Communications
Week 14	Milestone 3: Building Your Success Portfolio
Week 15	Looking Backward/Moving Forward

Milestones: Three integrated projects to help the students be aware of the overall purpose of the program and to integrate the discipline into that purpose:

Milestone 1 **Career Research Project** **Week 5**

(Research and write about jobs; visit the career center, library, on-site job locations; create graphs and incorporate computer skills)

Milestone 2 **Career Action Plan** **Week 10**

(Research information on the primary goal of the WIN program, verbalize gain from the program, offer recommendations for program improvement)

Milestone 3 **Building Your Success Portfolio** **Week 14**

(Build a personal portfolio showing accomplishments reached during the semester, including resume)

WEEK 1

DAY 1
Monday--August 23

9 a.m. Coffee/cokes/snacks--**Ann Munz**
Introductions by faculty and students
Introduction to course--**Gary Lankford**
- Establish comfort/rapport
- Ground rules (with overall outcomes)
- Contracts
- Time-keeping
- List of faculty's names, telephone numbers, E-Mail addresses

10:30 Break
10:45 Computer session (fundamentals of word processing)--**Greg Walters**
11:15 Communication--**Joyce Davis**
Students produce short paragraph answering questions on self
11:30 Math (fractions)--**Mary Monroe-Ellis**
12:00 **LUNCH** (Faculty/Staff dining room with WIN faculty and students)
1:00 Math--**Mary Monroe-Ellis**
1:30 Assessment (personality)--**Phyllis Pace**
2:30 Break
2:45 Scavenger Hunt--**Bill Hochstetler**
4:30 End of Day

Scavenger Hunt Ideas:

Security
ERC open lab
Learning Center
President's office
Dean's office
Library--card/ID
Computer Services for password
Records (get a date off the board for refunds)
Student Development Center
Career Center
Vision Volunteer office
Baseball Diamond
Bubble
Financial Aid office
Recreation room in student center

DAY 2
Tuesday--August 24

9:00 Reports in teams on scavenger hunt/team building--**Gary Lankford**
10:00 Computer training (hardware)--**Greg Walters**
10:30 Break
10:40 Math (decimals)--**Mary Monroe-Ellis**
11:10 Communications (short essay)--**Joyce Davis**
11:40 Goal Setting--**Gary Lankford**
12:00 **LUNCH**
1:00 Math--**Mary Monroe-Ellis**
1:30 Assessment (work)--**Phyllis Pace**
2:45 Break
3:00 B-149A Learning Plus assessment--**Bill Hochstetler**
4:30 End of day (can stay in B-149 until 5:50)

DAY 3
Wednesday--August 25

9:00	**Discuss work assessment--Gary Lankford**
9:30	**Computer (E-Mail)--Bill Hochstetler** **Class assignments, curriculum adjustments, class list**
10:00	**Communications (Sentence work/AIT modules)--Joyce Davis**
10:45	**Break**
11:00	**Math (Measurements)--Mary Monroe-Ellis**
12:00	**LUNCH**
1:00	**B-149A Learning Plus assessment--Bill Hochstetler**
3:00	**Break**
3:15	**Assessment--Learning Styles--Phyllis Pace**
4:30	**End of day**

DAY 4
Thursday--August 26

9:00	**Computer Session (WordPerfect/Keyboarding)--Greg Walters**
10:00	**Communications (sentence work/AIT Modules)--Joyce Davis**
10:45	**Break**
11:00	**Math (Integers)--Mary Monroe-Ellis**
12:00	**LUNCH**
1:00	**Discussion of Assessments--Phyllis Pace**
2:15	**Library (books, on-line)--Peter Nerzak**
3:15	**Break**
3:30	**Individual work (Learning Center/Open Labs/B147/faculty & Hochstetler)**
4:30	**End of day**

DAY 5
Friday--August 27

9:00	**Glossary of terms--compare understanding of terms and compile definitions--keyboard in a personal glossary** **Work as a group project on word processor** **(due the following Wednesday, Sept. 1)--Greg Walters**
10:00	**Faculty Planning--B248**
11:00	**Town Meeting--students and faculty--B149A**
12:00	**LUNCH**
A.M./P.M.	**Word process journal entry (due Monday) (B-120)--Bill Hochstetler** **Journal entry discussing what the students have learned about themselves this week.**
A.M./P.M.	**Math test in Testing Center**
A.M./P.M.	**E-Mail to faculty thoughts on week (B-120)--Bill Hochstetler** **(perhaps respond to faculty questions)**
P.M.	**AIT Videos (B-120)--Bill Hochstetler**

(Answer questions on video and put in notebook to submit on Monday, Aug. 30.)

APPENDIX VIII

Central Competencies

II. Central Competencies:

The student will

A. conceive ideas about a topic for the purpose of writing; organize, select, and relate ideas and develop them in coherent paragraphs; write Standard English sentences with correct structure, grammar, word choice, and spelling; vary writing style for different readers and purposes; improve his or her writing by restructuring, correcting errors, and rewriting; write a research report with appropriate primary and secondary sources; quote, paraphrase, and summarize accurately; and cite sources properly.

B. engage critically and constructively in the exchange of ideas; answer and ask questions coherently and concisely; follow spoken instructions; identify and comprehend the main and subordinate ideas in presentations and discussions; report accurately what others have said; conceive and develop ideas about a topic for the purpose of speaking to a group; choose and organize related ideas and present them clearly in Standard English; evaluate presentations by others; and vary his or her use of spoken language to suit different situations.

C. add, subtract, multiply, and divide whole numbers, fractions, decimals, negative numbers, and positive numbers; make and use measurements in traditional units (i.e., inches, feet, ounces, pounds, etc.) and in metric units; use integers, fractions and decimals; use ratios, proportions, and percentages; use roots and powers; use algebra; use geometry; make estimates and approximations, and to judge the reasonableness of a result; formulate and solve a problem in mathematical terms; select and use appropriate approaches and tools in solving problems (i.e., mental computation, trial and error, paper-and-pencil techniques, calculator, and computer); and use elementary concepts of probability and statistics.

D. identify and formulate problems, propose and evaluate way to solve them; recognize and use inductive and deductive reasoning; recognize fallacies in reasoning; draw and defend reasonable conclusions from information found in various sources, whether written, spoken, or displayed in tables and graphs; comprehend, develop, and use concepts and generalizations; and distinguish between fact and opinion.

E. set learning/job goals and priorities consistent with a stated job-related requirements; establish surroundings

and habits conductive to learning independently or with others; follow a schedule that accounts for both short- and long-term projects; locate and use resources external to the immediate work environment (e.g., libraries, computers, interviews, and direct observation); incorporate knowledge from such sources into the learning/job-development process; develop and use general and specialized vocabularies for reading, writing, speaking, listening, computing, and studying; understand and to follow customary instructions in order to recall, comprehend, analyze, summarize, and report the main ideas from reading, presentations, and other experiences; synthesize knowledge and apply to new situations; prepare for and devise strategies to satisfy job-related assessments including various examination types, job performance, contribution to team projects, simulations, and peer evaluations; and accept and learn from constructive criticism.

F. develop a working understanding of the terminology that is associated with modern-day computer equipment and associated concepts; will become familiar with and demonstrate understanding of the use of applications software found in business and industry; demonstrate proficiency in using a word processor; demonstrate understanding of the microcomputer system and it's operating system (DOS and/or Windows; PC) (alt: MAC or UNIX); become familiar with and demonstrate understanding of electronic spreadsheets; become familiar with and demonstrate use of several computer related hardware devices (ex: mouse, printer, diskettes, etc.); become familiar with the effect the computer has on society and job markets; apply computer resources to class/coursework; and demonstrate an understanding of the need for security, data accuracy, ethical standards and shared resources; become familiar with on-line resources, data access and use of local area networks and/or modem-access data exchange (EMail) or student-to-student information exchange (Internet/BitNet/DECnet). Note: an expected additional outcome in the integration of coursework from several learning-areas to be delivered, tested and managed by the use of the computer as an educational process-enhancing device.

G. understand a selected number of basic principles of technology and will be able to use the associated mathematics.

H. recognize the need to understand basic technical principles, that these principles undergird the world of technology, and that these principles apply to the mechanical, fluid, electrical and thermal energy systems found in technological devices.

I. develop confidence in their ability to understand and apply scientific concepts and principles, and will appreciate that this provides them with a basic preparation for advancement to higher levels of education and for a more successful entry into the world of work.

APPENDIX IX

Weekly Schedule

The committee decided on three integrated projects or milestones to help the students be aware of the overall purpose of the program and to integrate the disciplines into that purpose:

Milestone 1 **Career Research Project** **Week 5**

(research and write up jobs; visit the career center, library, on-site job locations; create graphs and incorporate computer skills)

Milestone 2 **Specific Job Profile** **Week 10**

(research information on the primary goal of the WIN program, verbalize gains from the program offer recommendations for program improvement)

Milestone 3 **Building a Success Portfolio** **Week 14**

(build a personal portfolio showing accomplishments reached during the semester--also include resume)

The themes for each week are as follows:

Week 1	Orientation, Introduction, and Assessment
Week 2	Awareness and Team Building
Week 3	Structuring Good Work Habits
Week 4	Real World Problem Solving
Week 5	Milestone 1: Career Research Project
Week 6	Rights and Responsibilities
Week 7	Dynamics of Working and Living
Week 8	Academic Competencies
Week 9	Competence in Technologies
Week 10	Milestone 2: Career Action Plan
Week 11	Global Competition
Week 12	Reaching Your Potential
Week 13	Effective Communications
Week 14	Milestone 3: Building a Success Portfolio
Week 15	Looking Backward/Moving Forward

The following gives the scheduling for each day of the second week of classes:

WEEK 2	DAY 1
9:00	Team Building
9:30	Computer session
10:30	Break
10:45	Communications
11:00	Math
11:30	Principles of Technology (Force)
12:00	LUNCH
1:00	Assessment (Locus of Control)
2:15	Time Management (B-120/Lankford)
2:45	Break
3:00	AIT Video
3:30	Individual work

DAY 2

9:00	Team Building/Personal Growth
9:30	Computer session
10:30	Break
10:45	Communications
11:00	Math
11:30	Principles of Technology
12:00	LUNCH
1:00	Principles of Technology/Student Development Rotations (B-120/Student Development Center)--Two teams of 10
2:45	Break
3:00	Principles of Technology/Student Development Rotations (B-120/Student Development Center)--Two teams of 10
4:30	End of day

DAY 3

9:00	Team Building
9:15	Computer session
10:15	Break
10:30	Communications
11:15	Math (Calculators)
11:30	Principles of Technology
12:00	LUNCH
1:00	Assessment Integration (Student Development Center)
2:15	Goals/Time Management
3:15	Break
3:30	Videos/various work

DAY 4

9:00	Team Building
9:15	Computer session
10:15	Break
10:30	Communications
11:15	Math (calculators)
11:30	Principles of Technology
12:00	LUNCH
1:00	Principles of Technology/Student Development Rotations
2:30	(B-120/Student Development Center)--Two teams of 10
2:45	Break
3:00	Principles of Technology/Student Development Rotations (B-120/Student Development Center)--Two teams of 10
4:30	End of day

DAY 5

9:00	Computer Training (B149)
11:00	Town Meeting (Students/Faculty)
12:00	LUNCH
1:00	Math test
	Word process journal entry
	E-Mail
	Library work
	Finish Goals/Time Management work
	"Catch-up"